

KIRKHENSHETYN, A. M.

Kirkhenshetyn, A. M. "Evolutionary principle in classification of contagious diseases,"  
Izvestiya Akad. nauk Latv. SSR, 1948, 10, p. 51-66 - In Latvian and Russian languages -  
Bibliog: 29 items

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Stateli, No. 3, 1949)

KIRKHEISHTYN, A. M.

Ratsionalizatsiya vaktsinatsii i seroterapii.

(" Rationalization of vaccinations and serotherapy.")

Izvestiya Akad. Nauk Latvian SSR, No. 1, 1949, pp. 45-82 - In Latvian and Russian languages.  
- bibliog. 62 items.

So: 1949 Letopis' Zhurnal'nykh Statey, item 11919      Uncl

KIRKHENSETEYN, A. M.

What one should know about the quality of food. Moskva, Pishchepromizdat, 1952. 134 p.

1. Food - Analysis. 2. Nutrition. 3. Vitamins.

KIRKHENSHTEYN, A. M.

USSR/Chemistry - Academy of Sciences Latvian SSR Jan 52

"Recent Work by Scientists of Soviet Latvia," Ya. V. Peyve, Pres Acad Sci Latvian SSR

"Priroda" No 1, pp 88-90

Outstanding achievements in work done by the Dept of Biol and Agr Sci, the largest subdivision of Acad Sci Latvian SSR, include improvement of alfalfa seed yields by 10-30% (cutting of tops before flowering and trace-element fertilization), use of Cu fertilizers (burned pyrite from Riga Superphosphate Plant), role of Co (particularly in animal feeding; addition of Co to food increased wt of hogs by 20%), planting of kok-saghyz on Latvian peat soils, study of morphology of various bacteria as well as rabies and smallpox viruses with the aid of the electron microscope (work by A. M. Kirkhenshteyn, Inst of Microbiol), effect of ascorbic acid on immunity, development of new technological processes for the synthesis of chemotherapeutic agents (A. I. Kalnin' Act Mem, Acad Sci Latvian SSR, and S. A. Giller, Corr Mem, Latvian SSR received Stalin Prizes for this work).

PA 211T37

KIRKHENSHTEYN, A. M.

KIRKHENSHTEYN, Augusts, 1872- ; ZHDRODOVSKIY, P.F., redaktor; RUDIN, Ye.I., redaktor; KRASIL'NIKOV, N.A., redaktor BUKIN, B.N., doktor biologicheskikh nauk, redaktor; GAYSINOVICH, A.Ye., kandidat biologicheskikh nauk, redaktor; NEVRAIYVA, N.A., tekhnicheskii redaktor

[Problems in microbiology and immunology; selected works] Problemy mikrobiologii i immunologii; izbrannye trudy. Moskva, Izd-vo Akad. nauk SSSR., 1954. 208 p. (MLRA 7:12)

1. Chlen-korrespondent AN SSSR (for Krasil'nikov). 2. Deystvitel'nyy chlen AMN SSSR (for Zhdrovskiy)  
(Microbiology) (Immunity)

*KIRKHENSHTEYN, A.M.*

A-3

USSR/General Division - Scientific Institutions.

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 68.

Author : A.M. Kirkhenshteyn  
Inst : Institute of Microbiology of the Academy of Sciences  
Latvian SSR.

Title : Institute of Microbiology.

Orig Pub : V kn.: 10 let raboty AN Latv SSR (1946-1956), Riga,  
Izd-vo AN Latv SSR, 1956, 3-15.

Abst : The Institute of Microbiology of the Academy of Sciences Latvian SSR organized in 1946 is working on problems of the morphology and physiology of microorganisms including pathogenic microorganisms, soil microbiology, and the fermentation of farm produce. In the fields of morphology and physiology of microorganisms considerable work on the investigation of the stimulating effect of vitamins on the growth and metabolism of microorganisms, and modifications in the morphology of the latter under

Card 1/2

IL'IN, V.K.; VASIL'YEV, V.S. [deceased]; MAYEVSKIY, V.V.; KHOLSHCHEVNIKOV, Ye.N.; KIRKHOFF, A.G.; LOGVINOVICH, S.L.; ABRAMOV, O.A.; MINAYEV-TSIPANOVSKIY, V.A., red.; RACHEVSKAYA, M.I., red.isd-va; VOLKOV, S.V., tekhn.red.

[Laundry equipment album] Al'bom prachechnogo oborudovaniia. Moskva, Isd-vo M-va kommun.khoz.RSFSR, 1958. 119 p. (MIRA 12:7)

1. Akademiya Kommunal'nogo khozyaystva. Proyektno-konstruktorskoye byuro.

(Laundry machinery)

KIRKHOGLANI, V.D., arkhitektor; STREL'TSOV, M.B., insh.

Standard apartment houses of few stories. Biul.tekh.inform. 4 no.10:  
17-19 0 '58. (MIRA 11:11)  
(Leningrad--Apartment houses)



KIRKILEVSKIY, I.L., starshiy tekhnik-leytenant

Breaks can be detected quickly and precisely. Vest. protivovozd.  
obor. no. 2:70 P '61. (MIRA 14:2)  
(Electric cables—Testing)

KIRKILEVSKIY, I.V. (Leningrad)

Shipworms. Priroda 53 no.4:89-92 '64.

(MIRA 17:4)

SOKOLOV, N.I., kand.tekhn.nauk, dotsent; KIRKIN, B.I., inzh.

Determination of the frequency characteristics of synchronous machines. Elektrichestvo no.1:29-35 Ja '62. (MIRA 14:12)

1. Moskovskiy energeticheskiy institut.  
(Electric machinery, Synchronous)

KIRKIN, B.I.

Experimental determination of the frequency characteristics of asynchronous motors. Elektrichestvo no.1:12-16 Ja '63.  
(MIRA 16:2)

1. Moskovskiy energeticheskiy institut.  
(Electric motors, Induction)

KIRKIN, B.I.; LINDORF, L.S.

Determination of the start characteristics of synchronous motors.  
Elektrichestvo no.6: 63-68 Je'64 (MIRA 1747)

1. Moskovskiy energeticheskiy institut (for Kirkin). 2. Vsesoyuz-  
nyy nauchno-issledovatel'skiy institut elektroenergetiki (for  
Lindorf).

18(7): 25(2) PAPER I BOOK EXPLOITATION 807/3135  
Corrosion I exhibition catalog; abstracts (Corrosion and Protection of Steel: Collection of Articles) Moscow, Mashgiz, 1979. 233 p. 7,000 copies printed.

Ed.: S.D. Tsamashov, Doctor of Chemical Sciences, Professor; Reviewers: A.A. Zashchinskii, Doctor of Chemical Sciences, Professor; and E.B. Ponomareva, Doctor; Ed. of Publishing House: Ye.I. Alievskii, Tech. Ed.: S.M. Pilyaev, Managing Ed. for Literature on Machine and Instrument Construction: S.P. Pokrovskii, Engineer.

PURPOSE: This book is intended for scientific and technical personnel concerned with questions of the corrosion and protection of metals.

CONTENT: The articles in this collection deal with the corrosion of steels in corrosive environments; investigation of the effect of various factors on corrosion; and methods of protecting steels from gas and electrochemical corrosion. Special attention is given to new methods of investigation. A number of the articles give the results of studies made under operating conditions. Raw data, obtained by the Department of Metal Corrosion.

Many metal steels (mainly steels of steel) are published here for the first time. The articles are the result of work conducted jointly at the Institute of the Academy of Metallurgical Sciences and "Vserossiiskii Nauchno-Issledovatel'skii Tsentr" (VNIIT) and the Khimicheskii level level M.I. Kallina (Chemical Plant level M.I. Kallina). Most of the articles contain practical recommendations on the protection of steels from corrosion. The preconditions are mentioned. References follow each article.

# TABLE OF CONTENTS

Preface	3
Tsamashov, S.D. Theory of Corrosion and Type of Increasing Corrosion Resistance of Metallic Alloys	5
Pyrylova, A.A. [Engineer], M.P. Dub [Candidate of Chemical Sciences], S.P. Krasova [Candidate of Technical Sciences], and Ye.M. Kuznetsov [Engineer]. Effect of a Gaseous Medium on Properties of the Surface of Stainless Alloys	50
Dub, S.P., and G.S. Logvinov [Engineer]. Stealing of Low-Alloy Steel With a Change of Temperature	55
Chernykh, V.I. [Engineer]. Effect of Oxides on the Corrosion of Iron and Low-Alloy Steels	57
Moskvin, G.S. [Engineer], I.P. Zhuk, and V.I. Podgornyy [Candidate of Technical Sciences]. Oxidation and Decarburization of High-Alloy Steels	71
Kozlov, M.P., and V.I. Tsamashov [Candidate of Technical Sciences]. Corrosion of Metals in Fluid Cells	89
Dub, S.P., S.M. Kichin [Engineer], and P.I. Kabanovskiy [Engineer]. Alkali-Acid Pickling of Chromium Steels	110
Agapkin, A.A. [Engineer], and V.A. Zil'ber [Candidate of Technical Sciences]. Effect of External Factors on the Hydrogenation of Pre-existing Steel During Pickling	132
Zil'ber, V.A., and M.A. Yeliseyeva [Candidate of Technical Sciences]. Corrosion Resistance of Low-Alloy Steels	142
Tsamashov, S.D., and A.A. Lobanov [Candidate of Technical Sciences]. Electrochemical Investigation of Atmospheric Corrosion of Metals	149
Tsamashov, S.D., and A.A. Lobanov. Effect of Cathodic Additions on Atmospheric Corrosion of Low-Alloy Steels	171
Tsamashov, S.D., M.I. Buzov [Engineer], S.M. Alievskii [Engineer], and A.P. Moskatikhina [Engineer]. Passivity of Chromium Steels	193
Kozlov, V.I. [Engineer], and V.A. Zil'ber. Effect of Corrosion Factors on the Corrosion Fatigue of Iron Wire	214
Kozlov, V.I. [Engineer], O.M. Kichin, V.A. Zil'ber, and V.A. Zil'ber. Effect of Corrosion on the Corrosion of Low-Alloy Steels Under Conditions of Free Synthesis	223

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722710012-9

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722710012-9"

KIRKIN, G.M.; ZHUK, N.P.

Effect of alloying with aluminum on the corrosion resistance  
of titanium in acetic and nitric acid solutions. Zashch.met.  
1 no.6:648-651 N-D '65. (MIRA 18:11)



L 23895-66 ENT(m)/ENP(t) LJP(c) JD/WW/JW/WB/JH

ACC NR: AP6008620

SOURCE CODE: UR/0365/65/001/006/0648/0651

AUTHORS: Kirkin, G. M.; Zhuk, N. P. 53  
B

ORG: none 27 27 18

TITLE: Effect of alloying titanium with aluminum upon the corrosion stability of titanium in acetic and nitric acid solutions

SOURCE: Zashchita metallov, v. 1, no. 6, 1965, 648-651

TOPIC TAGS: titanium base alloy, aluminum containing alloy, corrosion resistant alloy, aluminum, titanium, nitric acid, acetic acid

ABSTRACT: Behavior of Ti-Al alloys, containing 0.1, 0.3, 0.6, 1.0, 3.0, and 5.0% of Al, in solutions of acetic (from 5 to 80%) and nitric (from 5 to 56%) acids has been investigated at temperatures from 25 to 80C. Behavior of such alloys in sulfuric acid has been studied and reported upon earlier (G. M. Kirkin and N. P. Zhuk, Zashchita metallov, 1965, 1, 380). Degree of corrosion was determined gravimetrically after a 40-hour test. Electrochemical behavior of the metals and their alloys was studied by measuring stationary electrode potentials and by taking polarization curves by a potentiostatic method. It was established that Ti and its Al alloys are passivated in solutions of acetic and nitric acids. Ti, when alloyed with Al, loses some of its corrosion stability, as can be seen in Fig. 1. This can be due to the decrease in the protective properties of the passivating films on nonalloyed Ti. 2

Card 1/2

UDC: 669.018.8

L 23895-66

ACC NR: AP6008620

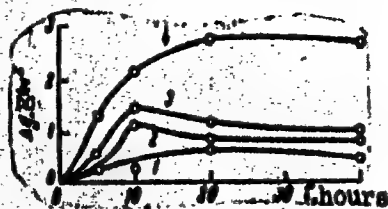


Fig. 1. Time-weight loss curves for titanium and its aluminum alloys in 56% nitric acid at 800. 1 - Ti; 2 - Ti + 0.3% Al; 3 - Ti + 1.0% Al; 4 - Ti + 5% Al.

Orig. art. has: 1 table and 3 figures.

SUB CODE: 07/ SUBM DATE: 24Apr65/ ORIG REF: 005/ OTH REF: 001

Card 2/2da

L 3606 66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/JH

ACC NR. AP6014323

(A)

SOURCE CODE: UR/0314/65/000/012/0033/0035

AUTHORS: Kirkin, G. M. (Engineer); Zhuk, N. P. (Doctor of chemical sciences) 5/

ORG: none

TITLE: Corrosion<sup>6</sup> stability of aluminum<sup>7</sup> alloy of titanium in solutions of orthophosphoric acid <sup>4</sup> <sub>27</sub>

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 12, 1965, 33-35

TOPIC TAGS: titanium base alloy, corrosion rate, chemical kinetics, ~~corrosion resistance,~~  
~~titanium, aluminum containing alloy~~ABSTRACT: Corrosion kinetics of titanium and titanium alloyed with aluminum (0.1--5.0%) in solutions of 5 to 80%  $H_3PO_4$  was determined at 25 to 80C by measuring weight

loss of samples after 40-hour testing. Electrochemical behavior of the samples was studied by measuring equilibrium electrode potentials of metals and alloys and by plotting polarization curves using a potentiometric method. The destruction of the materials takes place in a uniform manner along the sample surface. The process is a function of  $H_3PO_4$  concentration and may take place at constant, accelerated, and decelerated rates. Alloying of Ti with Al increases the corrosion rate, the maximum effect being observed at concentrations of 0.6 to 1.0% of Al. It is concluded that pure Ti, which is in a passive state in 20%  $H_3PO_4$  at 25 and 40C, is converted to an active state when alloyed with 5% of Al. Orig. art. has: 6 figures.

SUB CODE: 07// SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 1/1

UDC: 620.193.41:669.295.001.5

VOROB'YEV, A.T., glav. red.; POLYAKOV, L.N., zam. glav. red.; BORISOV, Ye.O., red.; IVASYSHIN, S.N., red.; IMANALIYEV, Sh.I., red.; LYA-SHENKO, I.V., red.; OLEYNIK, A.K., red. Prinimali uchastiye: BEK-BOYEV, D.B., spets. red.; KIRKIN, M.P., spets. red.; TETEVIN, G.P., spets. red.; YUDAKHIN, N.P., red.; YEFIMOV, N.A., tekhn. red.

[Agriculture of Kirghizistan] Sel'skoe khoziaistvo Kirgizii; kratkii spravochnik. Frunze, Ob-vo po raspr. polit. i nauchn. znaniu Kirgizskoi SSR, 1961. 199 p. (MIRA 14:10)  
(Kirghizistan—Agriculture)

KIRKIN, N. (Zelenodol'sk, Tatarskaya ASSR)

Those who do not want to be inactive. Pozh.delo 4 no.12:25  
D '58. (MIRA 11:12)

(Firemen)

KIRKIN, N.

Medals for heroism in fire fighting. Posh.delo 6:19 Mr '60,  
(Firemen) (MIRA 13'6)

KIRKIN, V.G., doktor tekhn.nauk, prof.

Variants in the mechanization of loading and unloading of  
piece freight packed in nonrigid containers. Trudy MIIT no.97:  
3-19 '58. (MIRA 11:8)  
(Railroads--Freight) (Loading and unloading)

KIRKIN, V.G., doktor tekhn.nauk, prof.

Effect of rigid construction of screw jacks on their efficiency.

Trudy MIIT no.97:20-30 '58.

(MIRA 11:8)

(Lifting jacks)



KIRKIN, V.G.

BRAVICHEV, V.A., kandidat tekhnicheskikh nauk, dotsent; BRODOVICH, N.V., kandidat tekhnicheskikh nauk; VLASOV, V.I., kandidat tekhnicheskikh nauk, retsensent, redaktor; YEGORNOV, A.N., professor, retsensent, redaktor; ZOBININ, N.P., doktor tekhnicheskikh nauk, professor; IVANNIKOV, D.G., kandidat tekhnicheskikh nauk, dotsent; KIRKIN, V.G., doktor tekhnicheskikh nauk, professor; KOTOV, O.K., kandidat tekhnicheskikh nauk; MARIYENBAKH, L.M., doktor tekhnicheskikh nauk, professor; MASHONIN, P.A., inzhener, RUBINSHTYIN, S.A., inzhener, RUDOY, M.L., inzhener, YUDIN, D.L., kandidat tekhnicheskikh nauk, dotsent, redaktor; PETROV, N.I., inzhener, retsensent; SIDOROV, S.I., inzhener, retsensent; SOKOLOV, I.G., kandidat tekhnicheskikh nauk, retsensent; BERNSTOVA, Ye.I., inzhener, retsensent; DOROKHIN, P.N., kandidat tekhnicheskikh nauk, retsensent; RUSTEM, S.L., kandidat tekhnicheskikh nauk, dotsent, redaktor; LARIN, M.N., laureat Stalinskoy premii, professor, doktor tekhnicheskikh nauk, retsensent; SOKOLOV, A.V., inzhener, retsensent; GRUDOV, P.P., laureat Stalinskoy premii, dotsent, kandidat tekhnicheskikh nauk, retsensent; DONNER, L.L., inzhener, retsensent; ZOBININ, professor, doktor tekhnicheskikh nauk, retsensent; BELAVENTSEV, N.V., inzhener, retsensent; SYCHEV, B.P., dotsent, retsensent; SHKOL'NIK, L.M., kandidat tekhnicheskikh nauk, retsensent; LOFANOV, D.V., kandidat tekhnicheskikh nauk, dotsent, retsensent, redaktor; MASHONIN, P.A., inzhener, retsensent, redaktor; OBUKHOV, A.V., inzhener, redaktor; BELETSKIY, D.G., kandidat tekhnicheskikh nauk, dotsent, redaktor; ODING, I.A., redaktor; LEVITSKIY, kandidat tekhnicheskikh nauk, dotsent, redaktor; YUDSON, D.M., tekhnicheskiiy redaktor  
(Continued on next card)

BRAVICHEV, V.A., kandidat tekhnicheskikh nauk, dotsent; & other: (Card 2)

[Railroad man's technical manual] Tekhnicheskii spravochnik zhelezнодорожника. Red.kollegiya; V.I. Vlasov. A.M.Egornov, N.P. Zobnin, E.F.Rudoi (Glav.red.) A.V.Sokolov. Moskva, Gos.transportnoe shel-dor.isd-vo. Vol. 12 [Processing metals at railroad transport enterprises] Obrabotka metallov na predpriyatiyakh zhelezno-dorozhnogo transporta. Otvet.red. N.P.Zobnin. 1954. 671 p.(MLRA 8:11)

1. Chlen-korrespondent, AN SSSR (for Oding)  
(Mechanical engineering)

SOV/112-57-5-11215

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5,  
pp 236-237 (USSR)

AUTHOR: Kirkin, V. Ye.

TITLE: On the Problem of Centimeter-Wave Propagation Through Building  
Materials (K voprosu rasprostraneniya santimetrovykh voln cherez  
stroitel'nyye materialy)

PERIODICAL: Izv. Voronezhsk. gos. ped. in-ta, 1955, Vol 17, pp 51-83

ABSTRACT: Experiments with propagation of centimeter waves in various building  
materials are described. Wave attenuation and reflection have been investigated  
depending on the thickness, moisture content, and chemical composition of  
various bricks, sand, concrete, cinder-concrete blocks, and wood.  
Bibliography: 6 items.

N.A.U.

Card 1/1

KIRKINA, D. F.

KIRKINA, D. F. --"Thermal and X-Ray Phase Analysis of the System  $\text{BaF}_2$  --  
 $\text{BeF}_2$ ." \* (Dissertations for Degrees in Science and Engineering Defended at USSR  
Higher Educational Institutions) Moscow Order of Lenin and Order of Labor  
Red Banner State University N. V. Lomonosov, Chair of Inorganic Chemistry, Moscow, 1955

SO: Knizhnaya Lotorets, No. 25, 18 Jun 55

\* For Degree of Candidate in Chemical Sciences

KIRKINA, D.F.; NOVOSILOVA, A.V.; SIMANOV, Yu.P.

Study of the system  $BaF_2$  --  $BeF_2$ . Zhur.neorg.khim. 1 no.1:125-132  
'56. (MLRA 9:10)  
(Barium fluoride) (Beryllium fluoride)

*KIRKINA, D. F.*

AUTHORS: Simanov, Yu. P. and Kirkina, D. F.

78-3-31/35

TITLE: On a New (High-Temperature) Modification of  $\text{Na}_2\text{SO}_4$ .  
(O Novoy (Vysokotemperaturnoy) Modifikatsii  $\text{Na}_2\text{SO}_4$ .)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1957, Vol.II, Nr.3,  
pp. 699-700. (USSR)

ABSTRACT: The existence of a high temperature modification of  $\text{Na}_2\text{SO}_4$  has been confirmed by X-ray photograph at  $720^\circ\text{C}$  of the powdered material deposited on a 0.5 mm-dia. platinum wire in a high temperature "Unicam" camera and a copper anode. Other evidence on this modification is briefly reviewed. There is 1 table and 7 references, of which 1 is Slavic.

ASSOCIATION: Moscow State University imeni Lomonosov., Chair  
of Inorganic Chemistry. (Moskovskiy Gosudarstvennyy  
Universitet im. Lomonosova, Kafedra Neorganicheskoy  
Card 1/2 Khimii.)

**AUTHORS:** KIRKINA, D. F.  
Reshetnikova, L. P., Novoselova, A. V., 78-2-19/43  
Kirkina, D. F.

**TITLE:** Investigations on the System  $\text{CaSO}_4\text{-BeSO}_4\text{-H}_2\text{O}$   
(Issledovaniye sistemy  $\text{CaSO}_4\text{-BeSO}_4\text{-H}_2\text{O}$ )

**PERIODICAL:** Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 2,  
pp. 378-382 (USSR)

**ABSTRACT:** The purpose of the present paper was an investigation of the solubility of the system  $\text{CaSO}_4\text{-BeSO}_4\text{-H}_2\text{O}$  and the explanation of the influence exerted by these sulfates upon each other. The solubility was investigated at 25 and 75° C. In the system  $\text{CaSO}_4\text{-BeSO}_4\text{-H}_2\text{O}$  the eliminated solid phase at 25 and 75° C is pure  $\text{CaSO}_4$  and neither double salts nor solid solutions could be determined. The  $\text{CaSO}_4$ , eliminated at 25° C crystallizes with 2 Mol of water. The  $\text{CaSO}_4$  eliminated at 75° C represents calcium-sulfate anhydrite. Chemically pure beryllium sulfate and calcium sulfate were used as initial substances.  $\text{CaSO}_4$  was produced by way of calcium chloride and sulfuric acid. The determination of beryllium in the solution is performed volumetrically. But the determination of calcium is performed with the aid of the radioactive

Card 1/2

Investigations on the System  $\text{CaSO}_4\text{-BeSO}_4\text{-H}_2\text{O}$ 

78-2-19/43

indicator  $\text{Ca}^{45}$ . For the separation of beryllium and calcium, calcium oxalate is first precipitated with the aid of ammonium oxalate in a neutral solution, whereas beryllium stays in the solution as a soluble complex. On addition of beryllium sulfate to the calcium-sulfate solution at 2% of beryllium sulfate a minimum of the solubility of  $\text{CaSO}_4$  occurs, then the solubility again increases to 5% of beryllium sulfate, and then it again decreases. Crystallographic analyses also showed that the solid phase only contains calcium sulfate and that neither double salts nor solid solutions occur between  $\text{CaSO}_4$  and  $\text{BeSO}_4$ . It was found that the solubility of calcium sulfate at an addition of beryllium sulfate at 25° C in comparison with the solubility in water is almost reduced six times (209 mg/100 g solution in water as compared to 31 mg/100 g solution) and that it is 13 times reduced at 75° C (200 mg as compared to 15 mg/100 solution). There are 4 figures, 3 tables, and 16 references, 2 of which are Slavic.

SUBMITTED: April 27, 1957  
AVAILABLE: Library of Congress

Card 2/2



KIRKINA, D.F.

USSR/ Physical Chemistry - Crystals

B-5

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 10941

Author : Kirina D.F., Novoselova A.B., Simanov Yu.P.

Inst : Academy of Sciences USSR

Title : On Polymorphism of Beryllium Fluoride

Orig Pub : Dokl. AN SSSR, 1956, 107, No 6, 837-838

Abstract : Tetragonal  $\text{BeF}_2$  (I) formed on thermal decomposition of ammonium fluoro-beryllate and having the structure of low-temperature cristobalite, is endothermally transformed at  $130^\circ$  into cubic form (face centered lattice,  $a = 6.78$ , kX), analogous to the high-temperature form of cristobalite. In a number of instances on heating of I endothermal effect is observed at  $400^\circ$ , but transformation into new form is not revealed roentgenographically. I begins to melt at  $545^\circ$  but main bulk of I melts at  $740^\circ$ ; stepwise melting of I indicates slow transformation of its modifications. I must be regarded as a pseudo single-component system.

Card 1/1

KIRKINA, L.I.; SIMIGIN, P.A.

Protection of cellulose materials against destruction by micro-organisms in tropical climates. Tekst.prom. 21 no.7:58-62 J1 '61.  
(MIRA 14:8)

(Cellulose)

KORSHAK, V.V.; KIRKINA, L.I.; MOZGOVA, K.K.; YEGOROVA, Yu.V.

Change of the mold resistance of graft copolymers of wool  
and silk. Khim. volok. no.4:28-29 '63. (MIRA 16:8)

1. Institut elementoorganicheskikh soyedineniy.

KIRKINA, T.S.

Effect of using forceps and of Cesarean section on newborns.  
Pediatrics 39 no.5:80 8-0 '56. (MIRA 10:1)

1. Iz kafedry akusherstva i ginekologii lechebnogo fakul'teta  
Kazakhskogo meditsinskogo instituta imeni V.M.Molotova.  
(CESAREAN SECTION) (FORCEPS, OBSTETRIC)

KIRKINSKAYA, V.N.

SMEKHOV, Ye.M.; KIRKINSKAYA, V.N.

"Stratigraphy of Tertiary deposits of Sakhalin" by S.N. Alekseichik,  
I.N. Kusina, I.I. Ratnovskii. Reviewed by Ye.M. Smekhov,  
V.N. Kirkinskaya. *Biul.MDIP. Otd.geol.* 31 no.4:81-84 J1-Ag '56.  
(MLBA 9:12)

(Sakhalin--Geology, Stratigraphic)  
(Alekseichik, S.N.) (Kusina, I.N.)  
(Ratnovskii, I.I.)

KIRKINSKAYA, V.N.

New data on the composition of rocks in the crystalline basement of the Irkutsk amphitheater and their bitumen potential. Dokl. AN SSSR 161 no.2:444-446 Mr '65. (MIRA 18:4)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazvedochnyy institut. Submitted August 13, 1964.

CHUCHIA, N.G.; BELYAKOVA, Ye.Ye.; BOROVSKAYA, I.S.; VOLKOV, A.M.; GRAYNER, M.I.;  
IL'INA, Ye.V.; KAZAKOV, I.N.; KIRKINSKAYA, Y.M.; KISLYAKOV, V.N.;  
KRASIL'NIKOV, B.N.; MAYMINA, L.G.; OSIPOVA, N.A.; RADIYKEVICH, L.Z.;  
ROMANOV, F.I.; KULIKOV, M.V., red.; DOLMATOV, P.S., vedushchiy red.;  
YASHCHURZHINSKAYA, A.B., tekhn. red.

[Geology, and oil and gas potentials of the Minusinsk Lowland]  
Geologicheskoe stroenie Minusinskikh meshgornyykh vpadin i  
perspektivy ikh nefte-gazonosnosti. Leningrad, Gos. nauchn.  
tekhn. izd-vo nef. i gorno-toplivnoi lit-ry Leningr. otd-nie,  
1958, 288 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledo-  
vatel'skii geologorazvedochnyi institut. Trudy, no. 120)

(MIRA 12:5)

(Minusinsk Lowland--Petroleum geology)  
(Minusinsk Lowland--Gas, Natural--Geology)

KIRKINSKAYA, T. A.

Cand Med Sci - (diss) "Morphology of blood and brain in intra-osteal fixation of fractures by metallic rods. (Experimental study)." Irkutsk, 1961. 28 pp with diagrams; (Irkutsk State Medical Inst); 200 copies; price not given; (KL, 5-61 sup, 203)



KIRKINSKAYA, T.A., kand.med.nauk; GOLOVNYKH, L.L., kand.med.nauk

Disability following injuries incurred in Irkutsk, Bratsk  
District, and Yuzhno-Sakhalinsk. Vop. travm. i ortop. no.13:  
72-75 '63. (MIRA 18:2)

1. Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy institut  
travmatologii i ortopedii.

KIRKINSKAYA, T.A., kand.med.nauk; GINZBURG, R.D., kand.med.nauk

Working methods of the staff of the Irkutsk Scientific Research  
Institute of Traumatology and Orthopedia visiting adjacent  
provinces. Vop. travm. i ortop. no.13:76-83 '63.

(MIRA 18:2)

1. Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy institut  
travmatologii i ortopedii.

KIRKINSKIY, V.A.; MAKAROV, Ye.S.

UO<sub>2</sub> - PtO<sub>2</sub> system. Zhur.neorg.khim. 10 no.8:1872-1876  
Ag '65. (MIRA 19:1)

1. Submitted September 17, 1964.

KIRKINSKIY, V.A.; RYAPOSOV, A.P.

Melting curve for antimonite up to a pressure of 15,000 kg/cm<sup>2</sup>.  
Pis', v red. Zhur. eksper. i teoret. fiz. 2 no.8:361-362 0 '65.  
(MIPA 18:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.  
Submitted August 3, 1965.

KIRKINSKIY, V.A.

Polarity of isomorphism. Geokhimiia no.2:122-131 F '63.  
(MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry,  
Academy of Sciences, U.S.S.R., Moscow.

KUZNETSOV, L.M.; KIRKINSKIY, V.A.; MAKAROV, Ye.S.

Interaction of uranium dioxide with lead monoxide. Zhur. neorg.  
khim. 9 no.5:1187-1196 My '64. (MIRA 17:9)

1. Institut geokhimi i analiticheskoy khimii imeni V.I.  
Vernadskogo AN SSSR.

KIRKINIKY, V. . . . .

Effect of pressure on the limits of solid solutions. Geokhimiya  
no. 5:534-543 My '65. (MIRA 18:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,  
Novosibirsk.

KIRKINSKIY, V.A.

Polyamorphic modifications of lead dioxide. Zhur. neorg. khim. 10  
no.9:1966-1970 S '65. (MIRA 18:10)

1. Institut geokhimi i analiticheskoy khimii imeni Vernadskogo AN  
SSSR.



KIRKINSKIY, V.A.

Effect of pressure on isomorphic miscibility. Geol. i geofiz.  
no.3:39-50 '65. (MIRA 18'6)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,  
Novosibirsk.

KIRKINSKIY, V...

Effect of temperature on the boundaries of isomorphic miscibility.  
Geokhimiya no.4:406-413 Ap '65. (MIRA 18:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,  
Novosibirsk.

11891-66 EWT(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) LJP(c) JD/HW  
ACC NR. AP5028013 SOURCE CODE: UR/0386/65/002/008/0361/0362

AUTHOR: Kirkinskiy, V. A.; Ryapozov, A. P.

ORG: Institute of Geology and Geophysics, Siberian Department, Academy of Sciences SSSR (Institut geologii i geofiziki Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Melting curve of antimonite up to 15,000 kg/cm<sup>2</sup> pressure

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 8, 1965, 361-362

TOPIC TAGS: antimony compound, high pressure research, melting, superhigh pressure

ABSTRACT: In view of the connection between melting under pressure and recent discovery of extremal points on the melting curves of several metals, the authors investigated the melting of antimonite (stibnite,  $Sb_2S_3$ ) in a superhigh-pressure multiplier with double mechanical support, based on a multiplier design described earlier (Butuzov, Shakhovskiy, and Gonikberg, Tr. In-ta kristallografii AN SSSR v. 11, 233, 1955). The pressure-transmitting medium was a siloxane liquid. The pressure was measured with a manganin resistance manometer accurate to  $\pm 100$  kg/cm<sup>2</sup>. A heater with a titanium container for the investigated substance and for the standard was placed inside a channel 25 mm in diameter. The melting temperature at hydrostatic pressure up to 15,000 kg/cm<sup>2</sup> was determined by differential thermal analysis. The emf from a set of ordinary and differential chromel-alumel thermocouples was registered with automatic recorders. The temperature measurement accuracy was  $\pm 3^\circ$ C.

Card 1/2

L 11891-66

ACC NR: AP5028013

The measurement results (Fig. 1) show that the melting point rises almost linearly with the pressure ( $dT/dP = 8 \text{ deg/katm}$ ) up to  $6000 \text{ kg/cm}^2$ . This corresponds to a volume effect of 5.5%. An interesting fact is the observed maximum on the melting point, at  $7000\text{--}7500 \text{ kg/cm}^2$ . The maximum melting temperature for  $\text{Sb}_2\text{S}_3$  is  $602^\circ$ . With further increase in the pressure, a very slow decrease in the melting point to  $595^\circ$  is observed at  $14,300 \text{ kg/cm}^2$ .



Fig. 1. Melting point of  $\text{Sb}_2\text{S}_3$  vs. pressure.

SUB CODE: 20/ SUBM DATE: 03Aug65/ ORIG REF: 002/ OTH REF: 004

CC  
Card 2/2

KIRKITADZE, N. A.: Master Agric Sci (diss) -- "The soils of Vanskiy Rayon and their productivity characteristics for grape production". Tbilisi, 1959, published by the Acad Sci Georgian SSR. 19 pp (Min Agric USSR, Georgian Order of Labor Red Banner Agric Inst), 150 copies (KL, No 13, 1959, 109)

*KIRKIYANOV, V.I.*

KIRKIYANOV, V.I., inzh.

Using electroacoustic method for adjusting compressors and  
turbocompressors. Nov. tekhn. i pered. op. v stroi. 20 no.3:28 M '58.  
(Electroacoustics) (Compressors) (MIRA 11:3)

KIRKLIS, Z.A. (Vil'nyus)

Use of punched cards for card catalogs of translations.  
NTI no.2:34-35 '63. (MIRA 16:11)

KIRKO, E. K., Cand Med Sci (diss) -- "Local intraosteal novocaine blockade in ear infections". Moscow, 1960. 17 pp (Second Moscow State Med Inst im N. I. Pirogov), 250 copies (KL, No 14, 1960, 137)



KIRKO, E. K.

Local intradermal novocaine block in ear diseases. Vest. otorin.  
no.4:72-80 '61. (MIRA 15:2)

1. Iz kliniki bolezney ukha, nosa i gorla (zav. - deystvitel'nyy  
chlen Akademii meditsinskikh nauk SSSR prof. B. S. Preobrazhenskiy)  
lechebnogo fakul'teta II Moskovskogo meditsinskogo instituta  
imeni N. I. Pirogova.

(NOVOCAINE) (EAR---DISEASES)

25603

S/197/61/000/006/003/007  
B104/B20121.5210

AUTHORS: Kirko, I., Reznikovich, K., Todes, O., Filippov, M.

TITLE: Circulation of materials during exposure in an atomic reactor (in loops). I. Schemes of circulation lines

PERIODICAL: Akademiya nauk Latvyskoy SSR, Izvestiya, no. 6(167), 1961, 27 - 32

TEXT: The production of short-life radioactive isotopes necessitates installing closed circulation systems in order to subject these substances to repeated exposure. As depending on phase and form of the material subjected to irradiation, one has to distinguish between loops through which as a whole the portionated material to be irradiated flows, and loops through which the thoroughly mixed material is pumped. On the scheme shown in Fig. 1, the irradiation of a solid substance transported in portions through the closed loop, is studied first. Transport from irradiation chamber (C) to emission chamber (H) is performed by a band conveyor or a similar appliance. A quantitative analysis of the circulation line is independent of the structural details, and can be

Card 1/4

25603

S/197/61/000/006/003/007

3104/B201

Circulation of materials ...

performed in a general form. The balance equation of the atoms activated by neutron irradiation per unit length of the irradiation chamber reads:  $dn/dt = \alpha - \lambda n$ . Here,  $\alpha = A/a = J_0 S/a$ , where  $A$  is the neutron flux,  $a$  the irradiation chamber length,  $J_0$  the neutron flux density in the irradiation zone, and  $S$  the absorption surface. The term  $\lambda n$  characterizes the decay rate of the activated atoms in the irradiation chamber itself. The following balance equation holds for the emission chamber:  $dn^*/dt = -\lambda n^*$ . For the total number of activated atoms in the emission chamber the authors obtain

$$N^* = \int_{x=0}^{x=a^*} n^* dx = w^* \int_{(t^*)} n^* dt, \quad (1.6)$$

where  $\tau^* = a^*/w^*$  denotes the time spent in the emission chamber,  $a^*$  is the emission chamber length. When the material subjected to irradiation is liquid, the mathematical study can, as is shown here, be conducted in the same manner, if suitable parameters are introduced. If the material irradiated consists of small solid particles, it will be advisable to

Card 2/4

Circulation of materials ...

25603  
S/197/61/000/006/003/007  
B104/B201

convey it in a liquid or gas flow. The production of "boiling bed" apparatus (Fig. 3) for the transport of such materials is of special interest. The equations

$$\frac{dN}{dt} = A - \lambda N - \frac{N}{\tau} + \frac{N^*}{\tau^*} \quad (2.1) \quad \text{and} \quad \frac{dN^*}{dt} = -\lambda N^* - \frac{N^*}{\tau^*} + \frac{N}{\tau} \quad (2.2)$$

are given for these apparatuses, where  $N$  is the total number of atoms activated in the irradiation chamber,  $\tau$  is the mean time spent in the irradiation chamber. The symbols with asterisks refer to analogous quantities in the emission chamber. Another scheme discussed is shown in Fig. 4. In systems of this type the agent is moved together with the particles to be transported. Only in the irradiation chamber there is a "boiling bed" with complete mixing of the material without any longitudinal displacement. The material irradiated is continuously conveyed to the emission chamber. The balance equation  $\partial n^*/\partial t = -\lambda n^* - w \partial n^*/\partial x$  is given for the emission chamber, where  $n^*$  is the concentration of active atoms per unit length of the emission chamber,  $w$  the velocity of the material passing through. The balance equation for the irradiation chamber reads  $dN/dt = A - \lambda N - N/\tau + n_H^* w^*$ . Here,  $n_H^*$  is the concentration of particles

Card 3/4

25603

S/197/61/000/006/003/007  
B104/B201

Circulation of materials ...

at the exit of the emission chamber. There are 4 figures and 2 Soviet-  
blpc references.

Legend to the figures: ① pump

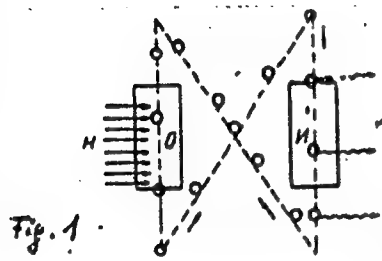
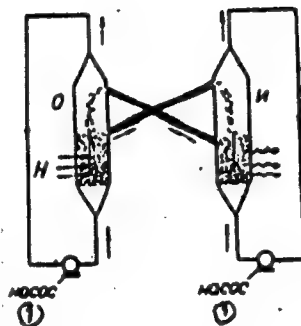
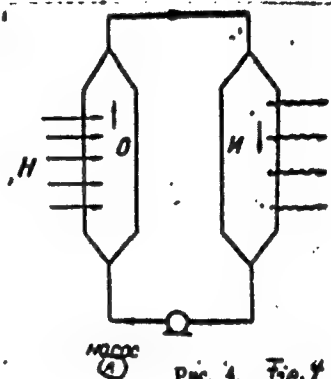


Fig. 1



Pnc. 3. Fig. 3



Pnc. 4. Fig. 4

Card 4/4

KIRKO, I.

On a mission to the Czechoslovak Socialist Republic. Vestis Latv  
ak no.6:165-168 '61.

(Czechoslovakia--Technical education)

KIRKO, I.

New stage in the development of scientific research. Vestis Latv  
ak no.7:139-140 '61.

(Latvia--Research)

L 00937-66 EWT(d)/EWT(1)/ENP(m)/EPA(s)-2/EWT(m)/EPA(sp)-2/EPF(n)-2/ENG(v)/ENP(t)/  
EPA(w)-2/I/ENP(b)/EWA(m)-2/ENP(1)/ETC(m) LJP(c) JD/WM/JG

ACCESSION NR: AP5019686

UR/0197/63/000/007/0022/0026

AUTHOR: Kirko, I. (Corresponding member AN LatSSR)

TITLE: Magnetohydrodynamics of condensed media

SOURCE: AN LatSSR. Izvestiya, no. 7, 1965, 22-26

TOPIC TAGS: MHD, electromagnetic pump, flow research, liquid metal, traveling magnetic field, induction pump 3,4,5,5

ABSTRACT: After briefly sketching the history, scope, and application of magnetohydrodynamics, the author lists the contributions of Soviet and particularly Latvian scientists in this field. The Laboratoriya magnitnoy gidravliki Instituta fiziki AN Latvyskoy SSR (Magnetic Hydraulics Laboratory, Institute of Physics, AN Latvian SSR), headed by O.A. Livelais, has studied flow phenomena of liquid metals in magnetic fields, and the effect of the latter on flow around bodies. The laboratory headed by Ya. Lielpeter is studying phenomena in a traveling magnetic field as a medium for exerting a noncontact influence on liquid metals. The SKB Instituta fiziki (SKB of the Institute of Physics) and TsKIBMA Latvyskogo sovnarkhoza (TsKIBMA of the Latvian Council of National Economy) have con-

Card 1/2



I 00937-66

ACCESSION NR: AP5019886

15  
 constructed a series of modern electromagnetic pumps. Several inventions have been made in the field of induction pumps by researchers at the "VEF" plant, Yu. Birzvalk is directing major research in the field of conduction MHD machines for liquid metals. Inventions pertaining to noncontact methods of measuring the velocity of a liquid metal are mentioned together with the inventors names. Work on applications in ferrous and nonferrous metallurgy, casting, chemical, and semiconductor industry is being carried out at the TsKTIEMIA Latviyskogo sovmarkhoza in Riga. Studies in the field of simulation of MHD phenomena are being conducted at the Riga Polytechnic Institute. An important role in the development of MHD is played by the Vychislitel'nyy tsentr Latviyskogo gosudarstvennogo universiteta (Computer Center of the Latvian State University).

ASSOCIATION: None 14, 15

SUBMITTED: 00

ENCL: 00

SUB CODE: ME

NO REF SOV: 000

OTHER: 000

Card. 2/2

USSR/Russia

Ferromagnetism

Magnetic Fields

11 Jan 1948

"Heterogeneity of the Surface of a Ferromagnet and  
Fields of Magnetic Dispersion," I. M. Kirko, Lat-  
vian State Pedagogical Inst, Riga, 3 pp

"Dokl Akad Nauk SSSR, Korya Ser" Vol LII, No 2

To explain decrease of the magnetic permeability  
with period of the magnetic field, V. K. Arnd'tsev  
offered hypothesis on possible influence of the  
surface of heterogeneous ferromagnet, obstructing  
the passage of magnetic current with strong skin  
effect. To confirm this hypothesis, author measures

42599

11 Jan 1948

USSR/Russia (Contd)

the longitudinal permeability of smooth bars and  
bars covered with screw threads in alternating  
field. Submitted by Academician S. I. Vavilov,  
11 Nov 1947.

42599

KIRKO, I. M.

KIRKO, I. M.

Kirko, I. M. "On certain physical peculiarities in the passage of electromagnetic waves through the layer of a bi-complex substance," Izvestiya Akad, nauk Latv, SSR, 1949, No. 2, p. 53-64 (Resume in Latvian), - Bibliog: 5 items

SO: U-4934, 29 Oct 53, (Izotopis 'Zhurnal 'nykh Statey, No. 16, 1949)

KIRKO, I.

Use of a short-circuited secondary winding for assessing the systematic errors of measurements of complex magnetic permeability.  
Latv. PSR Zinat. Akad. Vestis, '51, No.12, 1937-43. (MLRA 6:1)  
(KNA 56 no.667:2867 '53)

KIRKO, I.

Development of magnetohydrodynamics and related sciences in the  
Latvian S.S.R. Vestis Latv. akad. no.8:37-43 '61.

1. Akademiya nauk Latvyskoy SSR, Institut fiziki.

KIRKO, I. M.

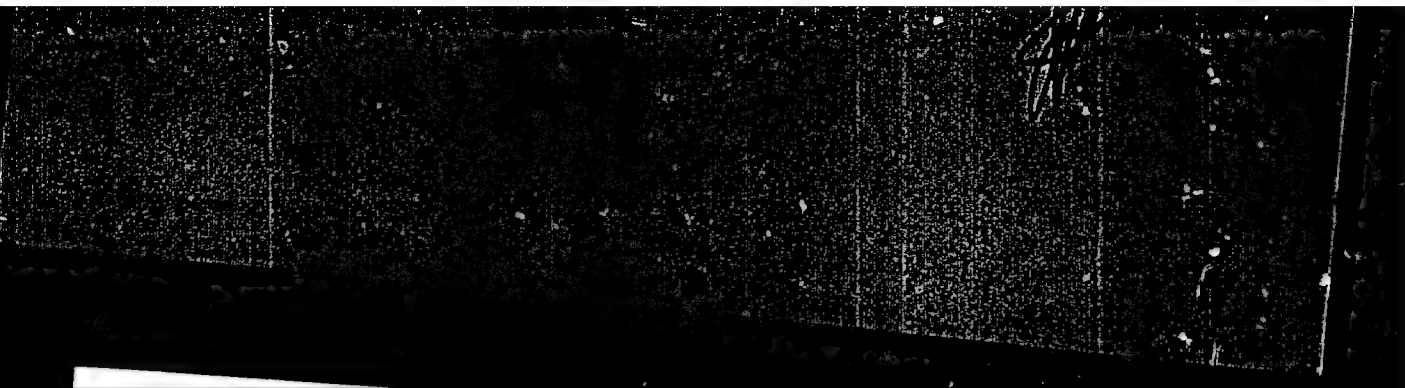
Magnetic Measurements

Dispersion of magnetic permeability of ferromagnetic materials in the sound frequency range, Izv. AN SSSR Ser. fiz. 16 No. 5, 1952

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722710012-9



APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000722710012-9"

KIRKO, I. M.

VITLI, V. G., and KIRKO, I. M.

"Magnetization of Finite Ferromagnetic Cylinders in Alternating Fields,"  
Tr. In-ta fiziki AN LatvSSR, No 6, pp 39-55, 1953

Magnetic permeability at various frequencies of the alternating field measured on specimens of the same material but of different shapes by the bridge method was studied. Results confirmed assumptions by Vanu-shkovskiy and Kirko on lowering the demagnetization rate of the terminals of the specimen with higher field frequency. (RZhFiz, No 1, 1953)

30: Sun, No 606, 5 Aug 55



...M.

Battelle Technical Review  
July 1951  
Metals-Mechanical and  
Physical Properties

10047\* Analysis of the Magnetization of Finite Ferromagnetic  
Cylinders in Constant Fields by the Method of the  
Theories of Dimensions and of Similarity. (Russian.) V. G.  
Vitol and L. M. Kiuko. Doklady Akademii Nauk SSSR, v. 93, no.  
5, Dec. 11, 1953, p. 807-808.  
Experimental data on cylinders of Armco iron, tool steel, and  
steels A-12 and U-10. Graphs. 9 ref.

*[Handwritten signature]*

KIRKO, I. M.

B. T. R.  
Vol. 3 No. 4  
Apr. 1954  
Metals-Mechanical and Physical  
Properties

5349\* Criteria of Similarity of Phenomena of the Surface  
Effect in Ferromagnetic Bodies. (Russian.) L. M. Kirko.  
Doklady Akademii Nauk SSSR, v. 91, no. 6, Dec. 21, 1953, p.  
1029-1031.  
Discusses effects of weak and strong fields on magnetic perme-  
ability. Graphs. 9 ref.

*KIRKO, I. M.*

USSR / Magnetism. Ferromagnetism

F - 4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9517

Author : ~~Kirko, I.M.~~

Inst : Institute of Physics, Academy of Sciences Latvian SSSR,  
Title : Similarity of Magnetization of Ferromagnetic Bodies in Constant Fields. [Riga.

Orig Pub : Latvian PSR Zinatnu Akademijas Vestis, Izv. AN Latv SSR,  
1954, No 7, 69-82

Abstract : The author considers the problems of the physical similarity of magnetization of ferromagnetic bodies in the case of nonlinearity of the magnetization curve. Five definitive similarity criteria are established for homogeneous and isotropic bodies placed in a homogeneous medium and in a homogeneous external field: (1) Geometrical similarity. (2) Same orientation in the external magnetic field. (3) Same ratio of permeabilities of the media. (4) Identity of the

Card : 1/2

USSR / Magnetism. Ferromagnetism

F-4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9517

Abstract : relative magnetization. (5) Similarity of the "magnetic history". The problem of similarity of magnetization of bodies made of magnetically-hard materials is considered, and an affinity coefficient is derived, as are the conditions for conservation of similarity upon assembly and disassembly of magnetic systems.

Card : 2/2

*Kirko, I. M.*

USSR/ Physics - Ferro-dielectrics

Card 1/1 Pub. 322 21/53

Authors : Origon'ev, M. N. and Kirko, I. M.

Title : Hook-up of the magnetization of ferro-dielectrics

Periodical : Dok. AN SSSR 102/4, 733-736, Jun 1, 1955

Abstract : Studies of the effective magnetic penetrability of ferro-dielectrics, which are fine ferrous balls pressed into an insulating material, are described. The study was conducted with the help of models in the form of torroids made out of ferrous balls of 1 1/2" in diameter pressed into an insulator (quartz sand). The studies were carried in DC and AC fields. Eight references: 1 German and 7 USSR (1931-1954). Graphs.

Institution : The Acad. of Sci., Lat. SSR, Institute of Physics

Presented by : Academician M. A. Leontovich, November 4, 1954

*Kirko, I.M.*  
AUTHORS:

See Table of Contents

Call Nr: AF 1141779

TITLE:

Applied Magneto-hydraulic Dynamics; (Prikladnaya  
magnitogidrodinamika (Trudy instituta fiziki, VIII)

PUB.DATA:

Izdatel'stvo Akademii nauk Latvyskoy SSR, Riga, 1956,  
131 pp. 800 copies

ORIG. AGENCY: Akademiya nauk Latvyskoy SSR, Institut Fiziki

EDITORS: Editorial Board: Ed.-in-chief, Tyutin, I.A., Candidate  
of Technical Sciences, Kirko, I.M. Candidate of Physical  
and Mathematical Sciences, Vitol, V.G. Candidate of  
Physical and Mathematical Sciences, and Varchenya, S.A.;  
Tech.Ed.: Bokman, R.

PURPOSE: See Table of Contents

Card 1/5

Applied Magneto-hydraulic Dynamics (Cont.)

Call Nr:AF 1141779

COVERAGE: See Table of Contents

TABLE OF CONTENTS: 1. Kirko, I.M. Modeling Magneto-hydrodynamic Phenomena in Liquid Metals. 3-23

There are 11 references, of which 4 are USSR, 2 translations into Russian, and the others are English and Danish.

2. Tyutin, I. A., Yankop, E. K. Electro-magnetic Pumps for Liquid Metals (Brief Review of the Literature on the Status of the Problem. 25-48

There are 45 references, of which 24 are USSR, 19 English, 1 Italian, 1 Dutch.

Card 2/5

Applied Magneto-hydraulic Dynamics (Cont.)

Call Nrs AF: 1141779

3. Tyutin, I. A. Introduction to the Theory of Induction  
Pumps. 49-58

There are 8 references, of which 5 are USSR, 2 American,  
1 Danish.

4. Birzvalk, Yu.A., Tyutin, I. A. Speed Distribution  
and Magneto-hydraulic Pressure Losses in a Rectangular  
Channel. 59-63

There are 2 references, both USSR.

Card 3/5



Applied Magneto-hydraulic Dynamics (Cont.) Call Nr: AF 1141799

8. Yankop, E. K. Single-phase a.c. pumps (Faraday  
a.c. pumps) 107-121

No references are given

9. Krumin', Yu.K. A Conduction Ball Situated in a Traveling  
Magnetic Field. 123-131

There are 4 references, 3 of which are USSR, 1 French.

AVAILABLE: Library of Congress

Card 5/5

KIRKO, I.M.

USSR/ Physical Chemistry - Liquids and Amorphous Bodies. Gases. B-6

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7379

Author : Kirko, I.M. and Lielausis, O.A.

Title : On the Application of the Analogy Method to the Determination of the Parameters of Liquid Metals

Orig Pub : Fiz. metallov i metallovedeniye, 1956, Vol 2, No 3, 563-564

Abstract : The total pressure and the angular velocity of the vortices at the center of a cylindrical vessel completely filled with mercury have been measured in a rotating magnetic field at frequencies of 50, 100, and 200 cps. A geometrical similarity to the form of a liquid was observed during all the experiments since the mercury did not have a free concave surface. When the magnetic field was turned off, the rotation of the liquid ceased after a time  $t_1$ . Some simple relations were found between the analogy criteria. On the basis of these relations, the

Card 1/2

- 59 -

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 35 (USSR) SOV/137-57-11-20885

AUTHOR: Kirko, I. M.

TITLE: ~~Analog~~ Simulation of Magnetohydrodynamic Phenomena in Molten Metals (O modelirovanii magnitogidrodinamicheskikh yavleniy v zhidkikh metallakh)

PERIODICAL: Tr. In-ta fiz. AN LatvSSR, 1956, Vol 8, pp 3-23

ABSTRACT: Magnetohydrodynamic phenomena are described by a nonlinear system of Maxwellian equations for moving mediums, the Navier-Stokes equations, and the equations of continuity. In view of the difficulties inherent in the analytical integration of these equations, the author examines the possibility of application of the methods of similarity and analog simulation thereto. Questions of the analog devices of the following types are examined: 1) Devices with constant electrical and magnetic boundary fields; 2) devices with fields constituting harmonic time functions; 3) devices with a given traveling magnetic-wave field. Also analyzed is the question of the behavior of molten metal in the phenomena of heat transfer in forced flow, the phenomena of convection due to the presence of gravity and thermal expansion of the metal being ignored.

N. V.

Card 1/1

KIRKO, I. M.

USSR / Magnetism. General Problems.

F-1

Abs Jour : Ref Zhur - Fizika, No 3, 1957, 6824

Author : Grigor'yev, M.M., Kirko, I.M.

Title : Investigation of the Magnetization of a Structure Modeling a Magnetodielectric.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 7, 1501 - 1508

Abstract : An experimental verification of the theoretical calculations of the magnetic properties of magnetodielectrics was carried out with models prepared of spherical particles 12.5 and 6.25 mm in diameter, and cylindrical particles 1 and 1.2 mm in diameter, made of material having a known magnetic permeability. The model particles were mixed in various proportions with quartz sand and the mixture was formed into toroidal specimens. The measurements were carried out with a constant magnetizing field and with an alternating field at frequencies from 0.1 to 20 kc. The experimental results have shown that best agreement between the experiment and the calculations is obtained when the demagnetizing factor of the structure is

Card : 1/2

USSR / Magnetism. General Problems.

F-1

Abs Jour : Ref Zhur - Fizika, No 3, 1957, 6824

Abstract : determined from the following equation:  $N = \frac{N_0}{1 + 37v}$  (No is the demagnetizing factor of an isolated particle, and v the volume concentration). Thus, N depends nonlinearly on the concentration of the ferromagnetic particles and is independent of the permeability of the material of the particles. The Ollendorf formula gives results that are in agreement with the data of the experiment only for  $v < 0.3$ . The Lichtenecker formula gave no agreement between the calculated and experimental values of the permeability of the structure. The measurements in the alternating fields made possible an investigation of the dispersion of the permeability of the structure and a calculation of the permeability of the spherical particles. The application of the methods of similarity theory to magnetization in an alternating field makes it possible, first, to determine the permeability and losses in a ferrodielectric at one frequency or at one concentration from measurements made at another frequency or at another concentration and secondly they lead to an estimate of the permeability of the particles used in actual ferrodielectrics.

Card

: 2/2

8 (0)

SOV/112-59-1-86

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 1, p 7 (USSR)

AUTHOR: Kirko, I. M., and Vitol, V. G.

TITLE: Simulating the Skin Effect in a Ferromagnetic Metal

PERIODICAL: V sb.: Mezhevuz. konferentsiya po primeneniyu modelirovaniya v elektrotekhn. zadachakh i matem. modelirovaniya. M., 1957, pp 162-164

ABSTRACT: Penetration of a plane electromagnetic wave into a ferromagnetic half-space can be simulated by a one-dimensional circuit consisting of non-linear inductors and resistors. Each component of the circuit comprises a saturable ferromagnetic-core reactor, a resistor in series with the reactor, and a leakage resistor.

L.V.N.

Card 1/1

KIRKO, I. M.: Doc Phys-Math Sci (diss) -- "Investigation of electromagnetic phenomena in metals, using the method of dimensions and similarity". Riga, 1958. 39 pp (Phys-Tech Inst Acad Sci USSR), 200 copies (KL, No 5, 1959, 142)

KIRKO, I.M.; KLYAVIN', Ya.Ya.; TYUTIN, I.A. [deceased]; UL'MANIS, L.Ya.

Model of an infinitely long channel containing liquid metal  
exposed to a traveling magnetic field. Nauch.dokl.vys.shkoly;  
energ. no.3:203-210 '58.  
(MIRA 12:1)

1. Rekomendovano Institutom fiziki AN Latvyskoy SSR.  
(Magnetohydrodynamics—Models)



AUTHORS: Vitol, V. G., Kirko, I. M. SOV/57-28-9-29/33

TITLE: Modelling of Surface Effect in a Ferromagnetic Metal  
(Modelirovaniye poverkhnostnogo effekta v ferromagnitnom  
metalle)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, /Vol 28,  
Nr 9, pp. 2055-2061 (USSR)

ABSTRACT: The magnetization of a ferromagnetic metal in an alternating field is a complicated and non-linear process. It is very hard to describe it in mathematical terms. One of the authors (Kirko in Ref 3) suggested a tentative analog computer for these processes with a multiple unit circuit diagram incorporating reactive coils with saturating ferromagnetic cores and with constant resistances permitting to perform analog computations. This is a description of the analog computer. It incorporated 10 reactive coils, resistances preventing a leakage to ground and resistances ganged with the reactive coils. The model described is an analog computer, which permits to compute the magnetization or the resistance of a ferromagnetic metal in the alternating field with varying field strength. This accurate equipment also permits to carry out such computations at surface field strengths where the maximum permeability is reached

Card 1/2

Modelling of Surface Effect in a Ferromagnetic Metal SOV/57-28-9-29/33

at the surface of the ferromagnetic substance. The method by L. R. Neyman (Ref 1) did not permit this. By measuring the voltage drop  $\Delta V'$  at each of the reactive coils the space distribution of magnetic permeability within a ferromagnetic substance under skin-effect conditions can be determined, using formula (14). Measurements made on the model permit the derivation of the law governing the shift of the maximum

of magnetic permeability as a function of the magnetic field strength at the surface: formula (15). This method can also be applied in more complicated cases. There are 7 figures, 2 tables, and 5 references, 5 of which are Soviet.

ASSOCIATION: Institut fiziki AN Latviyskoy SSR (Institute of Physics, AS Latviyskaya SSR)

Card 2/2

2

KIRKO, I. M.

p. 3, 4

PHASE I BOOK EXPLOITATION

SOV/3753

Akademiya nauk Latvyskoy SSR. Institut fiziki

Elektromagnitnyye protsessy v metallakh (Electromagnetic Processes in Metals)  
Riga, Izd-vo AN Latvyskoy SSR, 1959. 200 p. (Series: Its: Trudy, No. 11)  
Errata slip inserted. 1,000 copies printed.

Ed.: A. Teytel'baum; Tech. Ed.: A. Klyavinya; Editorial Board: V.G. Vitol,  
T.K. Kalnyn', I.M. Kirko (Resp. Ed.), and Ya. Ya. Klyavin'.

PURPOSE: This book is intended for physicists interested in electromagnetic processes in metals.

COVERAGE: This is a collection of fifteen articles by various authors on the investigation of electromagnetic processes in metals by modeling. Individual articles treat the following: conditions necessary for modeling particular phenomena; modeling the magnetization of ferromagnetic metals in a variable field on an iterated network consisting of choke coils with saturable reactors and constant resistances; external fields produced by ferromagnetic tubes which have been magnetized in a constant uniform field oriented along the axis; the possibility of using galvanic baths and other models for investigating fields with

Card 1/5

Electromagnetic Processes in Metals

80V/3753

continuously distributed electromagnetic forces, particularly turbulent fields; the magnetization of a system of interacting cylindrical particles; determination of the criterion relationships for the motions of an asynchronous engine rotor with similar mechanical characteristics (rotational moment, period of rotational oscillations around a point of equilibrium and attenuation ratio) when the slip is close to unity; the problem of computing the ponderomotive forces acting on a cylindrical conducting body placed in the traveling magnetic field of a cylindrical inductor; the motion of a sphere in magnetic hydrodynamics; the reflection and refraction of hydromagnetic waves of arbitrary polarization on the boundary of two ideal incompressible liquids with infinite conductivity; a study of phenomena in the turbulent flow of liquid metal in induction pumps under the effect of a traveling magnetic field; the operating principle of d-c pumps and the computation of their electromagnetic and hydraulic characteristics; abbreviating computations in designing linear induction pumps as suggested by I.A. Tyutin; nomographic computation of functions  $\varphi(k', h)$  and  $\gamma(k', h)$ ; and the construction of heaters producing thermal energy by an induced current. No personalities are mentioned. References accompany the articles.

Card 2/5

Electromagnetic Processes in Metals

80V/3753

TABLE OF CONTENTS:

Kirko, I.M. Application of the Theory of Similitude to the Modeling of Nonlinear Electromagnetic Phenomena in Metals	3
Vitol, V.G., and I.M. Kirko. Modeling of the Skin Effect in Ferromagnetic Metal	19
Grinberg, G.K. Similarity of External Fields of Ferromagnetic Tubes	31
Nitsetskiy, L.V. Modeling of the Electrical Field of Electromagnetic Pumps in a Galvanic Bath and on Electrical Conducting Paper	41
Grigor'yev, M.N. Some Problems of Magnetizing a System of Interacting Cylindrical Particles	57
Kalnin', R.K. Relationship Between the Magnetic Losses in a Ferrite Core With an Open Magnetic Circuit	73

Card 3/5

Electromagnetic Processes in Metals

BOV/3753

Krumin', Yu.K. Oscillatory Motion of a Conducting Axially Symmetrical Body in a Rotating Magnetic Field	83
Krumin', Yu.K. Problem of a Conducting Cylinder in a Traveling Magnetic Field of a Cylindrical Inductor	107
Gaylitis, A.K. The Motion of a Sphere in a Viscous Conducting Fluid in a Longitudinal Magnetic Field	121
Damburg, R.Ya., and V.Ya. Kravchenko. Behavior of Hydromagnetic Waves at the Boundary of Two Media	129
<u>Kirko, I.M., Ya.Ya. Klyavin, and I.A. Tyutin (Deceased) and L.Ya. Ul'manis.</u> Model of an Infinitely Long Channel With Liquid Metal in a Traveling Magnetic Field	143
Nikelson, A.E. Calculation of D-C Conduction Pumps for Liquid Metals	153
Filippov, M.V. Use of Nomograms for Determining the Parameters of Induction Pumps	163

PHASE I BOOK EXPLOITATION

80V/3792

Kirko, Igor' Mikhaylovich

Issledovaniye elektromagnitnykh yavleniy v metallakh metodom razmernosti i podobiya (Investigation of Electromagnetic Phenomena in Metals by the Methods of Dimensional Analysis and Similarity) Riga, Izd-vo AN Latvyskoy SSR, 1959. 182 p. (Series: Akademiye nauk Latvyskoy SSR. Institut fiziki) Errata slip inserted. 1,000 copies printed.

Ed.: A. Teytel'baum; Tech. Ed.: A. Klyavinya.

**PURPOSE:** This book is intended for physicists interested in electromagnetic processes in metals.

**COVERAGE:** The book deals with the application of the methods of similarity and dimensional analysis to the study of nonlinear electromagnetic processes in metals. The basic principles of these methods and their use in the investigation of various forms of electromagnetic fields are presented. The magnetization of ferromagnetic bodies in a constant field and in a variable field is discussed, as are the phenomena of the nonlinear skin effect in ferromagnetic metals. In conclusion the author says that the results of his

Card 1/3



Investigation of Electromagnetic Phenomena (Cont.)

SOV/5792

Investigation have demonstrated that the methods of similarity and dimensional analysis may be used in a broader range of electromagnetic phenomena in metals than has been customary up to this time. He suggests new practical fields of application for these methods, and emphasises that the difficulties of their use in the study of nonlinear electromagnetic phenomena make it expedient to apply a "new method" of dimensional groups as similarity criteria. No personalities are mentioned. References follow each chapter.

TABLE OF CONTENTS:

Introduction	5
Ch. 1. The Dimensional Analysis and Similarity Methods as Applied to Electromagnetic Phenomena	8
Ch. 2. Modeling Magnetization of Ferromagnetic Bodies in a Constant Field	26
Ch. 3. Similarity of Magnetization of Ferromagnetic Bodies in Variable Fields of Low Intensity	68
Card 2/3	

Investigation of Electromagnetic Phenomena (Cont.)

SOV/3792

Ch. 4. Dimensional Analysis and Modeling Methods of Studying the Phenomena  
of the Nonlinear Skin Effect in Ferromagnetic Metal 104

Ch. 5. Use of Dimensional Analysis and Principles of Modeling Electromag-  
netic Phenomena in Moving Ferromagnetic Bodies and Liquid Metals 141

Conclusion

184

AVAILABLE: Library of Congress

Card 3/3

JA/lmb/gap  
8-22-60

KIRKO, I. M. (Riga)

"Magnetohydrodynamic Phenomena in Liquid Metals."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

84448

S/057/60/030/009/014/021  
B019/B054

24.7900

AUTHORS: Kirko, I. M. and Filippov, M. V.

TITLE: Characteristics of a Suspended Layer of Ferromagnetic  
Particles in a Magnetic Field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 9,  
pp. 1081-1084

TEXT: The suspension and pseudoliquefaction of iron particles (0.1-0.248 cm) in water under the action of an alternating field was carried out with the aid of the experimental arrangement shown in Fig. 1. The particles were placed in a vertical glass tube through which the water was pressed from below. A magnetic coil was arranged around this glass tube, and a small periscope served for the visual observation. It was shown that suspension and pseudoliquefaction of the layer in a magnetic field differ from the same processes in the absence of a magnetic field. The authors thoroughly discuss the observations made, and then construct a phase diagram for the state of the suspended layer of ferromagnetic

Card 1/2